

IN THE CLAIMS

1. (Currently Amended) A method for the manufacture of a conductive polymer composite, comprising

impregnating a polymer with ~~an oxidative~~a halogen catalyst in a vapor phase, said catalyst effective for the polymerization of polypyrrole, wherein impregnating is solventless; and

exposing the impregnated polymer to a pyrrole-containing monomer vapor to form a conductive polymer composite.

2. (Original) The method of claim 1, wherein the pyrrole-containing monomer vapor comprises pyrrole or pyrrole and N-methyl pyrrole.

3. (Original) The method of claim 1, wherein the composite has a conductivity of about 10^{-7} to about 10^{-1} S/cm inclusive.

4. (Currently Amended) The method of claim 1, wherein ~~impregnating is by~~
~~exposing the polymer to iodine vapor~~the halogen catalyst is iodine.

5. (Canceled)

6. (Previously presented) The method of claim 1, wherein the polymer is a foam.

7. (Previously presented) The method of claim 1, wherein the polymer is a polyurethane, a polybutadiene, or a styrene-butadiene copolymer.

8. (Currently Amended) A method for the manufacture of a conductive polymer composite, comprising
impregnating a polymer with a vaporous halogen in the absence of a volatile organic compound ~~solvent and in the absence of supercritical carbon dioxide~~; and
exposing the impregnated polymer to a pyrrole-containing monomer vapor to form a conductive polymer composite.

9. (Previously presented) The method of claim 8, wherein the pyrrole-containing monomer vapor comprises pyrrole or pyrrole and N-methyl pyrrole.

10. (Previously presented) The method of claim 8, wherein the composite has a conductivity of about 10^{-7} to about 10^{-1} S/cm, inclusive.

11. (Currently Amended) The method of claim 8, wherein the ~~impregnating is by exposing the polymer to iodine vapor~~ halogen is iodine.

12. (Previously presented) The method of claim 8, wherein the polymer is a foam.

13. (Previously presented) The method of claim 8, wherein the polymer is a polyurethane, a polybutadiene, or a styrene-butadiene copolymer.

14. (Withdrawn) A conductive elastomeric foam composite, formed by the method of claim 1.

15. (Withdrawn) The conductive composite of claim 14, wherein the composite has a conductivity of about 10^{-7} to about 10^{-1} S/cm, inclusive.

16. (Withdrawn) A conductive elastomeric foam composite, formed by the method of claim 8.

17. (Withdrawn) The conductive composite of claim 16, wherein the composite has a conductivity of about 10^{-7} to about 10^{-1} S/cm, inclusive.

18. (Withdrawn) A conductive polymeric composite comprising a host polymer and a polypyrrole, wherein the composite has a conductivity of about 10^{-7} to about 10^{-1} S/cm inclusive, and further wherein the surface conductivity of a first side is within an order of magnitude of a surface conductivity of a second side parallel to the first side.

19. (Withdrawn) The composite of claim 18, wherein the surface conductivity of the first side is within 50% of the surface conductivity of the second side.

20. (Withdrawn) The composite of claim 18, wherein the surface conductivity of the first side is within 20% of the surface conductivity of the second side.

21. (Withdrawn) The composite of claim 18, wherein the surface conductivity of the first side is within 10% of the surface conductivity of the second side.

22. (New) The method of claim 8, wherein impregnating occurs in the presence of supercritical carbon dioxide.